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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/923,862 | 08/06/2001 | David G. Way | 064731.0254 | 9784 |
| 7590 Terry J. Stalford Baker Botts LLP Suite 600 2001 Ross Avenue Dallas, TX 75201 | | | EXAMINER BELLO, AGUSTIN | |
| | | | ART UNIT 2633 | PAPER NUMBER |
| DATE MAILED: 05/17/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,862

Applicant(s)

WAY, DAVID G.

Examiner

Agustin Bello

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2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/3/03 4/17/03</u> | 6) <input checked="" type="checkbox"/> Other: <u>IDS 11/25/02 07/09/02 10/04/01</u> |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe (EP 0759681) of the prior art cited by the applicant.

Regarding Claims 1, 3, 5, 7, and 9, Wantanabe teaches a wavelength division multiplexing multiplexer, comprising: a plurality of transmitters (reference numeral 23-MN through 23-11 in Figure 11), a filter array including a plurality of filters (reference numeral 28-11 through 28-MN in Figure 11), each filter having a disparate center frequency and an adjustable spectrum width (inherent in a tunable wavelength filter) operable to filter a mixed bandwidth channel; and a combiner (reference numeral 16-1 through 16-N in Figure 11) operable to combine into a wavelength division multiplexing (WDM) signal a plurality of mixed bandwidth channels passing through the filters of the filter array.

Regarding Claims 2 and 4, Wantanabe differs from the claimed invention in that Wantanabe fails to specifically teach that the center frequencies of the filters are substantially equally spaced from each other. However, one skilled in the art would clearly have recognized that equally spacing the center frequencies of the filters would have provided for efficient use of bandwidth and would have reduced the possibility of cross talk between the channels. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have

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equally spaced the center frequencies of the filters in order to efficiently use the bandwidth provided and to avoid crosstalk.

Regarding Claims 6 and 8, Wantanabe teaches that the filter means comprises a plurality of filters (reference numeral 28-11 through 28-MN in Figure 11) each comprising means for adjusting a spectrum width of the filter (e.g. inherent in tunable wavelength filters).

Regarding Claim 10, Wantanabe teaches that at least two of the optical transmitters comprise disparate rate modulators (reference numeral 22-11 through 22-MN in Figure 11).

Regarding Claim 11, Wantanabe teaches that at least one of the optical transmitters is operable to modulate data for a mixed bandwidth channel (inherent in the use of the modulators in Figure 11).

Regarding Claim 12, Wantanabe teaches a comprising a cross-connect (reference numeral 15-1 in Figure 11-14) operable to connect at least a subset of the optical transmitters to at least a subset of the filters in the filter array.

Regarding Claims 13 and 14, Wantanabe teaches at least one transponder (e.g. modulators 22-11 through 22-MN), the transponder operable to receive from a connected optical transmitter an optical signal having a center frequency, to generate a frequency adjusted optical signal (e.g. frequency/wavelength conversion) having a disparate center frequency and to provide the frequency adjusted optical signal to a connected filter of the filter array (reference numeral 32-11 through 32-MN in Figure 14).

Regarding Claims 15 and 16, Wantanabe differs from the claimed invention in that Wantanabe fails to specifically teach that the transponders are directly connected to the transmitters or that a cross-connect operates to connect at least a subset of the transponders to a

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subset of the filters. However, one skilled in the art would clearly have recognized that it would have been possible to connect the transponder to the transmitter in any desired fashion, including directly. Furthermore, Wantanabe teaches the use of a cross-connect to connect a subset of the filters to a combiner. One skilled in the art would have recognized that it would have been possible to connect a second cross-connect between the filters and the transponder, thereby allowing a subset of the filters to be connected to a subset of the transponders. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to connect the transponders directly to the transmitters and to have used a cross-connect to connect at least a subset of the transponders to a subset of the filters.

Regarding Claim 17, Wantanabe teaches that the transponders in the system are capable of wavelength conversion and therefore are comprised of bit-to-bit transponders.

3. Claims 18, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe in view of Taylor (U.S. Patent No. 5,938,309).

Regarding Claims 18, 22, and 23, Wantanabe teaches the transponders of the claimed invention, but differs from the claimed invention in that Wantanabe fails to specifically teach that the transponders are comprised of selectable clock sources to match the incoming clock rate of the received optical signal. However, one skilled in the art would clearly have recognized that it would have been necessary to retime the received signals according to the bit rate to which the received signal will be transformed. Taylor, in the same field of endeavor, teaches that it is well known in the art to retime signals when they are transformed from a lower/higher bit rate to a higher/lower bit rate (see Figure 2). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to retimed the received signal in order for it to match the

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desired incoming bit rate with a selectable clock.

4. Claims 19-21, 24-27, 29-34, 36, 38-41, and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe in view of Roldan of the prior art cited by the applicant.

Regarding Claims 19-21, 24-26, 31-33, 38-40, 45 and 46, Wantanabe differs from the claimed invention in that Wantanabe fails to specifically teach the use of a controller comprising logic encoded in media, the controller operable to determine a bandwidth for a channel, to select and connect an optical transmitter and a filter for the channel and to dynamically adjust the spectrum width of the filter to correspond to the bandwidth of the channel. However, one skilled in the art would clearly have recognized that dynamic adjustment of the bandwidth allocation system would have been beneficial. Furthermore, one skilled in the art would clearly have recognized that in order for the system to be truly dynamic, it would have required the use of a controller to orchestrate the use of the various components. Roldan teaches a management system which dynamically assigns a transmitter, determines the bandwidth of each signal, and dynamically assigns channels as a function of the bit rate. One skilled in the art would clearly have recognized that it would have been possible to incorporate this control mechanism into the device of Wantanabe to further control which filters are put into use and which are not.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have used a control system in the system of Wantanabe as taught by Roldan in order to orchestrate the dynamic bandwidth assignment between the elements of the system.

Regarding Claims 27, 34, and 41, as discussed above, Wantanabe teaches the use of modulator to convert the wavelength of the input signals from once center frequency to another.

Regarding Claims 29, 36, and 43, as discussed above Wantanabe teaches connecting a

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transponder to a channel filter.

Regarding Claims 30, 37, and 44, Wantanabe teaches that the channel filter comprises a transmission channel filter, further comprising adjusting a passband of a receiving channel filter at the center frequency of the group of base channels to correspond to the spectrum width for the channel (inherent in the use of tunable wavelength filters).

5. Claims 28, 35, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe in view of Roldan and Taylor (U.S. Patent No. 5,938,309).

Regarding Claims 28, 35, and 42, the combination of Wantanabe and Roldan teaches the transponders of the claimed invention, but differs from the claimed invention in that it fails to specifically teach that the transponders are comprised of selectable clock sources to match the incoming clock rate of the received optical signal. However, one skilled in the art would clearly have recognized that it would have been necessary to retune the received signals according to the bit rate to which the received signal will be transformed. Taylor, in the same field of endeavor, teaches that it is well known in the art to retune signals when they are transformed from a lower/higher bit rate to a higher/lower bit rate (see Figure 2). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to retune the received signal in order for it to match the desired incoming bit rate with a selectable clock.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB


AGUSTIN BELLO
PATENT EXAMINER
05/10/05